# Solving Boundary Problems For Biharmonic Operator By Using Comformable Fractional Derivative

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**Abstract.**

The investigation of the properties of the conformable fractional differentiation will be carried out. The solution of the biharmonic equation on the unit disk will be obtained by using the conformable fractional derivative method. The mathematical models of the various vibrating systems are partial differential equations and finding the solutions of such equations are obtained by developing the theory of eigenfunction expansions of differential operators. The biharmonic equation which is fourth order differential equation is encountered in plane problems of elasticity. It is also used to describe slow flows of viscous incompressible fluids. Many physical process taking place in real space can be described using the spectral theory of differentiable operators, particularly biharmonic operator.

***Keywords:*** Biharmonic Operator, Comformable Fractional Derivative, Boundary Problems.